

Name:

Solutions / Answers

1. Multiply  $x(x-4) = x^2 - 4x$

2. Multiply  $5x(x^2 + 2x - 4) = 5x^3 + 10x^2 - 20x$

3. Multiply  $(x-5)^2 = (x-5)(x-5) = x^2 - 5x - 5x + 25$   
 $= x^2 - 10x + 25$

4. Multiply  $(2x-3)^2 = (2x-3)(2x-3) = 4x^2 - 6x - 6x + 9$   
 $= 4x^2 - 12x + 9$

5. Multiply  $(x-3)(x-7) = x^2 - 7x - 3x + 21 = x^2 - 10x + 21$

6. Multiply  $(x+3)(x-7) = x^2 - 7x + 3x - 21 = x^2 - 4x - 21$

7. Multiply  $(x+7)(x-7) = x^2 - 7x + 7x - 49 = x^2 - 49$

8. Multiply  $(5x+6)(x-1) = 5x^2 - 5x + 6x - 6 = 5x^2 + x - 6$

9. Multiply  $(5x+6)(2x-1) = 10x^2 - 5x + 12x - 6 = 10x^2 + 7x - 6$

10. Factor  $x^2 + 9x = x(x+9)$

11. Factor  $2x^2 + 12x = 2x(x+6)$

12. Factor  $x^2 - 7x + 10 = (x-2)(x-5)$

13. Factor  $x^2 - 3x - 10 = (x-5)(x+2)$

14. Factor  $x^2 - 25 = (x-5)(x+5)$

15. Factor  $3x^2 + 19x + 20 = (3x+4)(x+5)$

16. Factor  $8x^2 + 14x - 15 = (2x+5)(4x-3)$

17. Solve  $3x(x+10)=0$

$$\begin{array}{l} 3x=0 \quad x+10=0 \\ x=0 \quad x=-10 \end{array}$$

$$\{0, -10\}$$

18. Solve  $(x+8)(x-8)=0$

$$\begin{array}{l} x+8=0 \quad x-8=0 \\ x=-8 \quad x=8 \end{array}$$

$$\{-8, 8\}$$

19. Solve  $(3x-4)(x+6)=0$

$$\begin{array}{l} 3x-4=0 \quad x+6=0 \\ 3x=4 \quad x=-6 \\ x=\frac{4}{3} \end{array}$$

$$\{\frac{4}{3}, -6\}$$

20. Solve  $(2x-5)(4x+3)=0$

$$\begin{array}{l} 2x-5=0 \quad 4x+3=0 \\ 2x=5 \quad 4x=-3 \\ x=\frac{5}{2} \quad x=-\frac{3}{4} \end{array}$$

$$\{\frac{5}{2}, -\frac{3}{4}\}$$

21. Solve  $5x - 20 = 0$

$$5(x - 4) = 0$$

$$x - 4 = 0$$

$$x = 4$$

$$\{4\}$$

22. Solve  $5x^2 - 20x = 0$

$$5x(x - 4) = 0$$

$$5x = 0 \quad x - 4 = 0$$

$$x = 0 \quad x = 4$$

$$\{0, 4\}$$

23. Solve  $x^2 + 7x + 12 = 0$

$$(x + 3)(x + 4) = 0$$

$$x + 3 = 0 \quad x + 4 = 0$$

$$x = -3 \quad x = -4$$

$$\{-3, -4\}$$

24. Solve  $x^2 - 5x - 24 = 0$

$$(x - 8)(x + 3) = 0$$

$$x - 8 = 0 \quad x + 3 = 0$$

$$x = 8 \quad x = -3$$

$$\{8, -3\}$$

25. Solve  $x^2 - 25 = 0$

$$(x - 5)(x + 5) = 0$$

$$x - 5 = 0 \quad x + 5 = 0$$

$$x = 5 \quad x = -5$$

$$\{5, -5\}$$

26. Solve  $3x^2 + 14x - 5 = 0$

$$(3x - 1)(x + 5) = 0$$

$$3x - 1 = 0$$

$$3x = 1$$

$$x = \frac{1}{3}$$

$$x + 5 = 0$$

$$x = -5$$

$$\{\frac{1}{3}, -5\}$$

27. Solve  $6x^2 + 7x - 20 = 0$

$$(2x + 5)(3x - 4) = 0$$

$$2x + 5 = 0$$

$$2x = -5$$

$$x = -\frac{5}{2}$$

$$3x - 4 = 0$$

$$3x = 4$$

$$x = \frac{4}{3}$$

$$\{-\frac{5}{2}, \frac{4}{3}\}$$